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10/565,088	01/18/2006	Tino Hansel	INA-PT169(4248-18-US)	5596

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EXAMINER	
ALTUN, NURI B	

ART UNIT	PAPER NUMBER
3657	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/565,088	HANSEL, TINO	
	Examiner	Art Unit	
	NURI ALTUN	3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 January 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *18 January 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This communication is a first Office Action Non-Final rejection on the merits. Claims 1-16 are currently pending and have been considered below.

Specification

The disclosure is objected to because of the following informalities: **character 1 is used to denote "power transmission drive" on page 9, paragraph 0042 and controller on page 12, paragraph 0050**.

Appropriate correction is required.

Claim Objections

Claim **1** is objected to because of the following informalities: **on line 6 of claim 1, the word "comprising" is spelled as "comprsing," which appears to be a misspelling**. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **1-16** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim **1**, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d). Therefore, all the claims that depend from claim 1 are also rejected.

Regarding claim **8,** it is not clear if the sensor is allocated to

only one of the units of the power transmission drive; or

either all of the group of three consisting of 'tensioning device, a camshaft adjuster, a deflection roller' or a water pump.

The claim is interpreted to be sensor being allocated to only one of the units of the power transmission drive.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims **1 and 10-14** are rejected under 35 U.S.C. 102(b) as being anticipated by **Shiki et al. (5,733,214)**.

As per claim 1, Shiki et al. teach a power transmission drive comprising

a synchronous drive for an internal combustion engine (E), with which a rotating angle between a driven member (5) and a drive member (3) can be detected,

wherein a member of the power transmission drive (1, 17) includes an electronic controller (14) which interacts with a control system of the internal combustion engine (E),

wherein a sensor (S1, S2), comprising a transducer, detects an oscillating angle deviation, a rotating angle deviation, an irregularity in rpm, or a correcting movement between the driven member (5) and the drive member (3) (col.4, lines 37-40, 53-57 and col.5, lines 3-10) and sends a signal to the controller (CPU) (col.5, lines 11-15), which calculates a control parameter (col.5, lines 16-21),

wherein after a defined limit value is exceeded, the controller initiates an emergency program of the internal combustion engine (col.5, lines 21-25; the tension adjustment of the belt by the controller is considered an emergency program).

As per claim 10, Shiki et al. teach measurement values, which exceed the limit value, and also measurement values, which correspond to a tolerance range preset for the limit value (col.5, lines 45-47), are stored in a fault memory of the controller (CPU) (col.5, lines 30-32; it is inherent that inputs are stored in a memory of the controller).

As per claim 11, Shiki et al. teach the measurement of the rotating angle deviation between the drive member and the driven member is taken for a warm-running internal combustion engine (col.5, lines 11-15; since the measurements are taken continiously during the operation of the engine, it is construed that measurements are taken for a warm-running internal combustion engine, also).

As per claim 12, Shiki et al. teach in an operating state of the internal combustion engine (E), in connection with the at least one sensor (S1, S2) and the controller (CPU), a continuous comparison of measurement values is performed by the controller for determining an oscillating angle deviation, an irregularity in rpm, or a

rotating angle deviation between the driven member (5) and the drive member (3) (col.5, lines 16-25).

As per claim 13, Shiki et al. teach the power transmission means (B) for the power transmission drive comprises a toothed belt.

As per claim 14, Shiki et al. teach a tensioning device (T) is allocated to a loose section of the power transmission drive (see Fig. 1).

Claims **1 and 8-14** are rejected under 35 U.S.C. 102(b) as being anticipated by **Inagaki et al. (JP 62,180,157)**.

As per claim 1, Inagaki et al. teach a power transmission drive comprising

a synchronous drive for an internal combustion engine, with which a rotating angle between a driven member and a drive member can be detected (page 2, 2nd paragraph lower left),

wherein a member of the power transmission drive includes an electronic controller which interacts with a control system of the internal combustion engine , wherein a sensor, comprising a transducer, detects an oscillating angle deviation, a rotating angle deviation, an irregularity in rpm, or a correcting movement between the driven member and the drive member and sends a signal to the controller, which calculates a control parameter, wherein after a defined limit value is exceeded, the controller initiates an emergency program of the internal combustion engine (see Fig. 8; controller's lighting warning lights in response to a sensed tension abnormality is considered as initiating an emergency program).

As per claim 8, Inagaki et al. teach the sensor (15) is allocated to a unit of the power transmission drive, comprising a camshaft adjuster (see Fig. 2).

As per claim 9, Inagaki et al. teach after an oscillating angle deviation, rotating angle deviation, or irregularity in rpm set as a limit value has been exceeded, the controller triggers optical signal (see Fig. 8 and page 2 paragraph 2 lower left).

As per claim 10, Inagaki et al. teach measurement values, which exceed the limit value, and also measurement values, which correspond to a tolerance range preset for the limit value, are stored in a fault memory of the controller (see Fig. 8; it is inherent that inputs are stored in a memory of the controller).

As per claim 11, Inagaki et al. teach the measurement of the rotating angle deviation between the drive member and the driven member is taken for a warm-running internal combustion engine (see Fig. 8; since the measurements are taken continiously during the operation of the engine, it is construed that measurements are taken for a warm-running internal combustion engine, also).

As per claim 12, Inagaki et al. teach in an operating state of the internal combustion engine, in connection with the at least one sensor (15) and the controller, a continuous comparison of measurement values is performed by the controller for determining an oscillating angle deviation, an irregularity in rpm, or a rotating angle deviation between the driven member and the drive member (see Fig. 8).

As per claim 13, Inagaki et al. teach the power transmission means (3) for the power transmission drive comprises a toothed belt.

As per claim 14, Inagaki et al. teach a tensioning device (10) is allocated to a loose section of the power transmission drive (see Fig. 1 and page 2 paragraph 1 lower left).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **2 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shiki et al. (5,733,214),** in view of **Inada (JP 2003184682)**.

As per claim 2, Shiki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose a free engine clutch allocated to the driven member or the drive member protects a drive for an accelerated angular velocity of the power transmission drive.

Inada teaches a fuel injection pump (40) with the concept of a free engine clutch (50) preventing reverse rotation of the pump (see abstract).

Based on the teachings of Inada, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the drive method and emergency program of Shiki et al. to in a clutch/fuel pump system as taught by Inada in the drive member in order to provide same benefits for a proper belt tension in a diesel engine.

As per claim 7, Inada teaches the free engine clutch (50) comprises a clamping body free-wheel or a clamping roller free-wheel (see Figs. 1 and 2).

Claim **3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Shiki et al. (5,733,214),** in view of **Gruber et al. (5,839,401)**.

Shiki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose for forming a coupled drive, a power transmission means of the power transmission drive is connected to a running wheel of the power transmission drive acting as a control drive for the internal combustion engine.

Gruber et al. teach an internal combustion engine having the concept that, for forming a coupled drive, a power transmission means (4) of the power transmission drive is connected to a running wheel of the power transmission drive acting as a control drive for the internal combustion engine (see Fig. 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power transmission drive of Shiki et al. to include the coupled drive taught by Gruber et al. in order to provide control over the drive.

Claims **4-6 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Shiki et al. (5,733,214),** in view of **Gruber et al. (5,839,401)**, as applied to claim 3 above, further in view of **Inada (JP 2003184682).**

As per claim 4, Shiki et al. and Gruber et al. combination teaches all the structural elements of the claimed invention, as mentioned in claim 3 above, but doesn't

explicitly disclose the power transmission drive includes, as a drive member, a fuel pump, which, in connection with a free engine clutch, prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump.

Inada teaches the power transmission drive includes, as a drive member (15), a fuel pump (40), which, in connection with a free engine clutch (50), prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump (see abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Shiki et al. and Gruber et al. to include the pump and clutch taught by Inada in order to prevent reverse rotation of the pump.

As per claim 5, Inada teaches a free engine clutch (50) is arranged in a running wheel (see Fig. 1) between an inner ring locked in rotation with a pump shaft (15) and an outer ring of the running wheel (see Figs. 1 and 2).

As per claim 6, Inada teaches the free engine clutch (50) is inserted within a housing of the fuel pump (40) and connects to two journals of the pump, which is a high-pressure pump (see Figs. 1 and 2).

As per claim 15, Inada teaches the fuel pump (40), which is pivotally supported against a spring element (24) simultaneously acts as a tensioning device of the power transmission drive (see Fig. 2; it is inherent that pump supported against a spring acts as a tensioning device.)

Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Shiki et al. (5,733,214),** in view of **Wilmore (20040251758)**.

Shiki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but doesn't explicitly disclose the power transmission drive includes a starter generator, with which the internal combustion engine is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode.

Wilmore teaches a hybrid propulsion system for a motor vehicle having the power transmission drive including a starter generator (ISG), with which the internal combustion engine (ICE) is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode (see paragraphs 0018 and 0019).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Shiki et al. to include the concepts of start and generator modes as taught by Wilmore in order to achieve greater fuel economy and lower emissions.

Claims **2 and 7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Inagaki et al. (JP 62,180,157),** in view of **Inada (JP 2003184682)**.

As per claim 2, Inagaki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but don't explicitly disclose a free engine clutch allocated to the driven member or the drive member protects a drive for an accelerated angular velocity of the power transmission drive.

Inada teaches a fuel injection pump (40) with the concept of a free engine clutch (50) preventing reverse rotation of the pump (see abstract).

Based on the teachings of Inada, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the drive method and emergency program of Inagaki et al. with the clutch/fuel pump assembly as taught by Inada in the drive member in order to provide same benefits for a proper belt tension in a diesel engine.

As per claim 7, Inada teaches the free engine clutch (50) comprises a clamping body free-wheel or a clamping roller free-wheel (see Figs. 1 and 2).

Claim **3** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Inagaki et al. (JP 62,180,157),** in view of **Gruber et al. (5,839,401)**.

Inagaki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but doesn't explicitly disclose for forming a coupled drive, a power transmission means of the power transmission drive is connected to a running wheel of the power transmission drive acting as a control drive for the internal combustion engine.

Gruber et al. teach an internal combustion engine having the concept that, for forming a coupled drive, a power transmission means (4) of the power transmission drive is connected to a running wheel of the power transmission drive acting as a control drive for the internal combustion engine (see Fig. 1).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the power transmission drive of Inagaki et al. to

include the coupled drive taught by Gruber et al. in order to provide control over the drive.

Claims **4-6 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Inagaki et al. (JP 62,180,157),** in view of **Gruber et al. (5,839,401)**, as applied to claim 3 above, further in view of **Inada (JP 2003184682).**

As per claim 4, Inagaki et al. and Gruber et al. combination teaches all the structural elements of the claimed invention, as mentioned in claim 3 above, but doesn't explicitly disclose the power transmission drive includes, as a drive member, a fuel pump, which, in connection with a free engine clutch, prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump.

Inada teaches the power transmission drive includes, as a drive member (15), a fuel pump (40), which, in connection with a free engine clutch (50), prevents full-load operation of the internal combustion engine for a disruption in a function of the fuel pump (see abstract).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Inagaki et al. and Gruber et al. to include the pump and clutch taught by Inada in order to prevent reverse rotation of the pump.

As per claim 5, Inada teaches a free engine clutch (50) is arranged in a running wheel (see Fig. 1) between an inner ring locked in rotation with a pump shaft (15) and an outer ring of the running wheel (see Figs. 1 and 2).

As per claim 6, Inada teaches the free engine clutch (50) is inserted within a housing of the fuel pump (40) and connects to two journals of the pump, which is a high-pressure pump (see Figs. 1 and 2).

As per claim 15, Inada teaches the fuel pump (40), which is pivotally supported against a spring element (24) simultaneously acts as a tensioning device of the power transmission drive (see Fig. 2; it is inherent that pump supported against a spring acts as a tensioning device.)

Claim **16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Inagaki et al. (JP 62,180,157),** in view of **Wilmore (20040251758).**

Inagaki et al. teach all the structural elements of the claimed invention, as mentioned in claim 1 above, but doesn't explicitly disclose the power transmission drive includes a starter generator, with which the internal combustion engine is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode.

Wilmore teaches a hybrid propulsion system for a motor vehicle having the power transmission drive including a starter generator (ISG), with which the internal combustion engine (ICE) is started in a start mode, and the internal combustion engine drives the power transmission drive in a generator mode (see paragraphs 0018 and 0019).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mechanism of Inagaki et al. to include the

concepts of start and generator modes as taught by Wilmore in order to achieve greater fuel economy and lower emissions.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The reference Ninomiya et al. (JP 404,252,823) teach a control device for auxiliary device for vehicle having control means that change the load in case of an increase after the slip of belt.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NURI ALTUN whose telephone number is (571)270-5807. The examiner can normally be reached on Mon-Fri 7:30 - 5:00 with first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272 7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/
Primary Examiner, Art Unit 3657

NBA